

WHAT IS CLAIMED IS:

1. (Amended) A mail arrival notice system comprising:

a mail delivery device for delivering mail received through the Internet to terminals; and
terminals for requesting arrival notice of receive mail under conditions set in advance for said mail delivery device;

wherein, when mail arrival notice to said terminals from said mail delivery device fails, said mail arrival notice data is stored, and the mail arrival notice is transmitted to said terminals again after a predetermined time elapses, while, when said mail arrival notice is successfully transmitted, said stored mail arrival notice data is deleted from said mail delivery device; and

when said mail delivery device, after storing said mail arrival notice data, receives other mail directed to said terminals, it temporarily stops transmission of said stored mail arrival notice data, and releases said transmission temporarily stopped when arrival notice of said other mail fails.

2. (Deleted).

3. The mail arrival notice system according to claim 1, wherein, when said mail delivery device, after storing said mail arrival notice data, receives other mail directed to said terminals, it deletes said stored mail arrival notice data.

4. The mail arrival notice system according to claim 1, wherein said mail delivery device can set any number of retransmissions of mail arrival notice.

5. The mail arrival notice system according to claim 1, wherein said mail delivery device changes conditions for transmitting mail arrival notice to said terminals, based on reasons for failure in transmission.

6. The mail arrival notice system according to claim 1, wherein, in the case where a user of said terminals has plural terminals of different types, when mail arrives in the user, said mail delivery device assigns priorities to said plural terminals and transmits mail arrival notice.

7. The mail arrival notice system according to claim 6, wherein said mail delivery device, when said mail arrives, assigns priorities to said plural terminals, based on one of mail contents, notice conditions, and terminal capabilities, or combinations of two or more of these items.

8. A mail delivery device in a system including the Internet for delivering mail, a mail delivery device, connected to the Internet, for creating mail arrival notice to notify terminals of the arrival of said mail, a public network, connected to said mail delivery device, for relaying said mail arrival notice, and terminals, connected to said public network, for receiving said mail arrival notice, wherein:

said mail delivery device includes: mail receiving means, connected to said Internet, for receiving said mail; mail storing means for storing said received mail; mail

transmitting means for transmitting said received mail to said terminals; user data storage means for storing data of a user of a transmission destination of said mail as user information; notice determination means, when storing of said mail terminates and mail information containing information about a transmission destination of said mail is inputted, for obtaining said user information from the user data storage means and determining whether to perform said mail arrival notice; timer management means for performing timer management; mail arrival notice means for creating mail arrival notice from said mail information; transmission data storage means for storing transmission data of said mail arrival notice; and network connection means, connected to said public network, for transmitting said mail arrival notice to said terminals;

said mail arrival notice means include: mail arrival notice creation means for creating said mail arrival notice from said mail and said user information; notice transmission means for creating a transmission request of said mail arrival notice and storing it in the transmission data storage means; network connection control means for converting said transmission request into a format interpretable to said network connection means; retransmission data storage means for storing retransmission data required to create a retransmission request, which is a next transmission request in the case of failure of said transmission request; retransmission control means for creating said retransmission request; and

retransmission data deletion means for deleting said retransmission data within said retransmission data storage means according to the transmission request of said notice transmission means.

said mail arrival notice means, when mail arrival notice to said terminals fails, transmits said mail arrival notice again to said terminals after a predetermined time elapses, and when said mail arrival notice is successfully transmitted, deletes said mail arrival notice data from the device; and further,

said mail arrival notice means, when receiving second mail for the same transmission destination as a transmission destination of first mail received previously by said mail receiving means, temporarily stop transmission of a retransmission request for said first mail.

9. (Deleted).

10. The mail delivery device according to claim 8, wherein said mail arrival notice means include transmission data deletion means, when mail arrival notice succeeds, for deleting transmission data of the same notice conditions for the same terminal within said transmission data storage means.

11. (Deleted).

12. The mail delivery device according to claim 11, wherein said mail arrival notice means, when mail arrival notice for said second mail fails after temporarily stopping transmission of said retransmission request, cancel the stop of transmission of said retransmission

request for said first mail.

13. The mail delivery device according to claim 11, wherein said mail arrival notice means, when mail arrival notice for said second mail succeeds after temporarily stopping transmission of said retransmission request, delete all retransmission data for the same transmission destination.

14. The mail delivery device according to claim 9, wherein said mail arrival notice means, when receiving second mail for the same transmission destination as a transmission destination of first mail received previously by said mail receiving means, delete retransmission data for said first mail stored in said retransmission data storage means.

15. The mail delivery device according to claim 14, wherein said mail arrival notice means, when mail arrival notice of said second mail fail, store retransmission data for said second mail in said retransmission data storage means.

16. The mail delivery device according to claim 8, wherein said mail arrival notice means set said number of retransmissions of mail arrival notice.

17. The mail delivery device according to claim 9, wherein: said mail arrival notice means include a retransmission control table for storing correspondences between types of responses from said public network and next transmission processing methods; said network connection control means send a response of said public

network to a transmission request of mail arrival notice created by said mail arrival notice creation means to said notice transmission means; said notice transmission means sends said response to said retransmission control means; said retransmission data storage means store, from said response and said retransmission control table, information required to create a retransmission request, which is a next transmission request in the case of failure of the transmission request; and said retransmission control means create said retransmission request.

18. The mail delivery device according to claim 8, wherein, in the case where a terminal user has plural terminals of different types, said mail arrival notice means register information of the plural terminals of said user in said user data storage means, and when mail arrives in the user, said mail arrival notice creation means assign priorities to said plural terminals and create mail arrival notice.

19. The mail delivery device according to claim 18, wherein, when assigning priorities to said plural terminals, said mail arrival notice creation means assign transmission priorities to terminals of transmission destinations, based on one of mail contents, notice conditions, and terminal capabilities, or combinations of two or more of these items.

20. The mail delivery device according to claim 18, wherein said mail arrival notice means have data of a table of correspondences between phone numbers of said plural terminals and information about charges for communications

with said terminals, and assigns priorities to said plural terminals, using the information about charges for communications with said terminals.

21. The mail delivery device according to claim 18, wherein said mail arrival notice means have data of a table of correspondences between carriers of phone numbers and phone numbers of transmission destinations, and communication charges, and, when assigning priorities to said plural terminals, assigns the highest priority to a terminal having the lowest communication charge.

22. The mail delivery device according to claim 18, wherein, said mail arrival notice means, when said mail arrival notice is unsuccessfully transmitted, decide a terminal of a next transmission destination according to the transmission priorities of said terminals, and retransmits said mail arrival notice.

23. The mail delivery device according to claim 8, wherein, in the case where a terminal user has plural terminals of different types, said mail arrival notice means register information of the plural terminals of said user in said user data storage means, and when mail arrives in the user, said mail arrival notice creation means create contents of mail arrival notice in a format suited for a terminal of a transmission destination, based on one of mail contents, notice conditions, and terminal capabilities, or combinations of two or more of these items.

24. The mail delivery device according to claim 8, wherein, in the case where said terminals output a request

to obtain mail text containing the terminal capabilities of said terminals and notice conditions after receiving said mail arrival notice, the contents of said mail are created in a format suited for the transmission destination terminal, according to said terminal capabilities and said notice conditions.

25. The mail delivery device according to claim 8, wherein, in the case where a terminal user has plural terminals of different types, information of the plural terminals of said user is registered in said user data storage means, and for at least some of the terminals, terminal information of transfer destination and transfer instructions are registered, the mail arrival notice means make mail arrival notice to said some of the terminals, and transmits arriving mail to a terminal of transfer destination.

26. The mail delivery device according to claim 18, wherein, for at least some of plural terminals owned by a user, terminal information of transfer destination and transfer instructions are registered, and in the case where mail arrival is accompanied by mail arrival notice to said some of the terminals, arriving mail is transmitted to a terminal of transfer destination.

27. The mail delivery device according to claim 8, wherein said terminals have a transfer instruction function, and after receiving mail arrival notice, transmit transfer instructions and terminal information of transfer destination to the mail arrival notice means, and upon

receipt of the transfer instructions, the mail arrival notice means transmit arriving mail to a terminal of transfer destination.

28. The mail delivery device according to claim 8 in a system including the Internet for delivering mail, a mail delivery device, connected to the Internet, for creating mail arrival notice to notify terminals of the arrival of said mail, a public network, connected to said mail delivery device, for relaying said mail arrival notice, and terminals, connected to said public network, for receiving said mail arrival notice, wherein:

said mail delivery device includes: mail receiving means, connected to said Internet, for receiving said mail; mail storing means for storing said received mail; mail transmitting means for transmitting said received mail to said terminals; user data storage means for storing data of a user of transmission destination of said mail as user information; notice determination means, when storing of said mail terminates and mail information containing information about a transmission destination of said mail is inputted, for obtaining said user information from said user data storage means and determining whether to perform said mail arrival notice; timer management means for performing timer management; mail arrival notice means for creating mail arrival notice from said mail information; transmission data storage means for storing transmission data of said mail arrival notice; and network connection means, connected to said public network, for transmitting

said mail arrival notice to said terminals; and

in the case where a terminal user has plural terminals of different types, information of the plural terminals of said user is registered in said user data storage means, and for at least some of the terminals, terminal information of transfer destination and transfer instructions are registered, and the mail arrival notice means make mail arrival notice to said some of the terminals and transmit arriving mail to a terminal of transfer destination.

29. A mail delivery device in a system including the Internet for delivering mail, a mail delivery device, connected to the Internet, for creating mail arrival notice to notify terminals of the arrival of said mail, a public network, connected to said mail delivery device, for relaying said mail arrival notice, and terminals, connected to said public network, for receiving said mail arrival notice, wherein:

said mail delivery device includes: mail receiving means, connected to said Internet, for receiving said mail; mail storing means for storing said received mail; mail transmitting means for transmitting said received mail to said terminals; user data storage means for storing data of a user of transmission destination of said mail as user information; notice determination means, when storing of said mail terminates and mail information containing information about a transmission destination of said mail is inputted, for obtaining said user information from the

user data storage means and determining whether to perform said mail arrival notice; timer management means for performing timer management; mail arrival notice means for creating mail arrival notice from said mail information; transmission data storage means for storing transmission data of said mail arrival notice; and network connection means, connected to said public network, for transmitting said mail arrival notice to said terminals; and

said terminals have a transfer instruction function, and when said mail arrival notice means make mail arrival notice to the terminals, after receiving said mail arrival notice, transmit transfer instructions and terminal information of transfer destination to said mail arrival notice means, and upon receipt of the transfer instructions, the mail arrival notice means transmit arriving mail to a terminal of transfer destination.